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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,618	03/29/2001	Michael J. Romine	NOR/979	4107

37172 7590 02/08/2005

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EXAMINER	
KOCH, GEORGE R	

ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/821,618	Applicant(s) ROMINE, MICHAEL J.	
	Examiner George R. Koch III	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *11-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/06/2004 has been entered.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1,2 4-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutledge et al (US Patent 6,391,387 B1) and in view of Hynes (US 6,132,809).

As to claim 1, Rutledge discloses a liquid dispenser comprising a support member (see Figures 19-22, especially item 630 and related substructures) which moves linearly (see movement axis 632 and 634), and a liquid dispensing head operatively (item 610 and related substructures) connected to said support member and capable of pivoting movement (see axis 614 in Figure 19, around a cradle at axis G-G which is considered to be part of the dispenser) relative to said support member with the capability to move in response to contact of the liquid dispensing head with the substrate, said liquid dispensing head having a liquid flow-path extending there-through

terminating in an outlet for dispensing fluid onto the substrate, and a linear displacement sensor (items 668) operatively connected to said support member and said liquid dispensing head, said linear displacement sensor being *capable* of generating a signal that indicates a sensed displacement of said liquid dispensing head relative to said support member (see column 16, line 60 to column 19, line 36) in response to contact of the liquid dispensing head with the substrate.

The embodiment of Rutledge in Figure 19 does not disclose using a linear movement for the liquid dispensing head. Rutledge discloses pivotal movement.

Hynes discloses that it is known is conformal coatings to use multi-axis dispensing system with both a support member (item 38) mounted for linear movement in a first axis (i.e., the Z-axis referred to in column 2, lines 53-63, which is a result of end effector 26 sliding on Z-axis ball screw slide 38)) and a liquid dispensing head (either of items 34 and 44) also mounted for linear movement along a second axis in a parallel direction to the first axis (created by linear pneumatic slide 60) in addition to pivoting movement. Hynes discloses that the use of multiple linear movements affords multiple dispensing options and improves coating efficiency (see column 1, lines 35-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the additional linear movement axis which is parallel to the first movement axis in order to achieve multiple dispensing options and improved coating efficiency.

As to claim 2, the linear displacement sensor is a linear encoder (see column 17, lines 59-61, which recites "linear encoder" and see items 674 and 672).

As to claim 4, Rutledge discloses a controller device which is a control mechanism for the apparatus, which is a robot (definition of robot : a device that automatically performs complicated often repetitive tasks or : a mechanism guided by automatic controls - from the Merriam Webster dictionary), and this robot control mechanism functions as claimed.

As to claims 5 and 6, the device of Rutledge is capable of being programmed to perform as claimed.

Claims 7, 9 and 10 are rejected on the same grounds as claims 1, 2, and 4-6 above.

4. Claims 1, 2, 4-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes (US 6,132,809) and in view of Rutledge et al (US Patent 6,391,387 B1).

Hynes discloses a floating head liquid dispenser for dispensing liquid onto a substrate, comprising a support member (item 26 and structures attaching item 26 to the screw slide 38 and frame 21) mounted for linear movement toward and away from the substrate along a first axis (as defines by Z-axis ball screw slide 38), a liquid dispensing head (especially items 34) operatively connected to the support member (item 26) and capable of linear movement relative to the support member along a second axis parallel to the first axis (and defined by pneumatic slide 60) in response to contact of the liquid dispensing head with the substrate (shown in Figure 7), the liquid dispensing head having a liquid flow-path extending there-through terminating in an

outlet (the recited needle valve in column 2, lines 36-67) for dispensing fluid onto a substrate.

Hynes does not disclose a linear displacement sensor operatively connected to said support member and said liquid dispensing head, said linear displacement sensor being capable of generating a signal that indicates a sensed displacement of said liquid dispensing head relative to said support member in response to contact of the liquid dispensing head with the substrate.

Rutledge discloses a conformal coating (i.e., sealant coating structure) with multiple axis of movement and which also discloses a linear displacement sensor (items 668) operatively connected to said support member and said liquid dispensing head, said linear displacement sensor being *capable* of generating a signal that indicates a sensed displacement of said liquid dispensing head relative to said support member in response to contact of the liquid dispensing head with the substrate (see column 16, line 60 to column 19, line 36). Rutledge discloses that such a sensor allows for the determination of the position of the bracket to the sensor, and thus, the spray or coating position of the gun (see column 18, lines 29-50, especially). One in the art would immediately recognize that the sensor system provides feedback as to the positioning of the coating structure, and that this would improve coating efficiency. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such a linear displacement sensor as claimed in order to improve coating efficiency.

As to claim 2, Rutledge as incorporated discloses that the linear displacement sensor is a linear encoder (see column 17, lines 59-61, which recites a "linear encoder" and see items 674 and 672).

As to claim 4, Hynes discloses a robot controller (see Figure 8 and columns 3, lines 30-45). Furthermore, Rutledge as incorporated discloses a controller device which is a control mechanism for the apparatus which is a robot (definition of robot : a device that automatically performs complicated often repetitive tasks or : a mechanism guided by automatic controls - from the Merriam Webster dictionary), that this robot control mechanism is interacting with the linear displacement sensor, and this robot control mechanism functions as claimed. One in the art would ad would immediately appreciate that interaction between the robot control mechanism and linear displacement sensor would improve coating efficiency. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such a linear displacement sensor as claimed in order to improve coating efficiency.

As to claims 5 and 6, the device of Rutledge as incorporated into Hynes is capable of being programmed to perform as claimed.

Claims 7, 9 and 10 are rejected on the same grounds as claims 1, 2, and 4-6 above.

5. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutledge and Hynes (as applied to claims 2 and 7 above in section 2) or Hynes and Rutledge (as applied to claims 2 and 7 above in section 3) in view of the Anorad

Brochure (Installation, Operation, and Maintenance Manual MERS50 Linear Encoder System) cited to show that a characteristic not disclosed in the Rutledge is inherent.

Rutledge discloses using a sensor mechanism and a tape scale as the sensor assembly. Rutledge is silent as to whether the sensor mechanism is optical, but Rutledge further discloses that the preferred sensor mechanism and tape scale is the Model MERSSO-DI sold by the Anorad Corporation.

The Anorad Brochure discloses that the preferred linear encoder (the Anorad MERSSO) is a *optical* sensor and tape scale (see Anorad Linear Motor division, - Installation, Operation and Maintenance Manual MERSSO- Linear Encoder System which describes the MERSSO sensor, especially page 1, first paragraph of section 1.2, which cites "The MERS50 Encoder system is a high precision, position feedback transducer for machinery or other equipment control systems. As a non-contact, optical, encoder the system comprises a profiled scale strip attached to an appropriate substrate axis, and a scanning readhead."). Thus, Rutledge inherently discloses using an optical sensor mechanism, since the preferred sensor assembly is known to be an optical mechanism.

6. Claims 5, 6, 9 and 10 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Rutledge and Hynes as applied to claims 4 and 7 above, or Hynes and Rutledge as applied to claim 4 above, and further in view of Ng (US Patent 5,820,623).

As to claims 5, 6, 9 and 10, Rutledge does not explicitly disclose that the control mechanism is responsive to the signal from the linear displacement sensor to either stop movement of said support member, or to provide an alert.

Ng discloses a robotic control mechanism is responsive to the signal from the linear displacement sensor to either stop movement of said support member, or to provide an alert (see especially column 10, lines 39-50). One in the art would appreciate that such responses would prevent damage to either the apparatus or the substrate by preventing improper movements by the apparatus. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated such a robotic control mechanism with the movement stopping and alerting mechanisms in order to prevent damage to the apparatus and substrate.

Response to Arguments

7. Applicant's arguments filed 12/06/2004 have been fully considered but they are not persuasive. In response to applicant's argument that the references do not recite the "contact" step or response, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George R. Koch III
Patent Examiner
Art Unit 1734

GRK
2/05/2005